IN THE ABSTRACT

Replace the abstract originally provided on the cover sheet of the PCT application with the following new abstract. A new abstract numbered page 27 is enclosed for the last page of the application following the claims.

ABSTRACT OF THE DISCLOSURE

A tunable resonant grating filter that can reflect optical radiation at a resonant wavelength, the resonant wavelength being selectively variable. The filter includes a diffraction grating, a planar waveguide, and a light transmissive material having a selectively variable refractive index to permit tuning of the filter, the light transmissive material forming a tunable cladding layer for the waveguide, preferably a liquid crystal material. The diffraction grating is placed on the opposite side of the tunable layer with respect to the planar waveguide, thereby making it possible to tailor the grating structural parameters to the desired bandwidth of the filter response without significantly affecting the tunability of the filter. Within the resonant structure, the core layer, i.e., the waveguide, can be placed close to the tunable layer either in direct contact with the tunable layer or with an interposed relatively thin intermediate layer(s) between the core and the tunable layer.